HISTORIC HOMESTEADS IN THE MEADOWS OF THE DAN

A BACK-GROUND OF OAKS & CEDARS.

THORNFIELD.

CORNER OF THE KITCHEN.

ANOTHER link to bygone days, representing architectural skill in restful, striking proportions, is Thornfield, another historic home in the Meadows of the Dan, owned by Mr. Joseph H. Scales. This homestead, to which is attached so much interest pre-eminently for the charming hospitality which has crowned its days, was built in 1835 by Peter Scales, and is preserved in all of its dignity and unostentatious beauty. On approaching Thornfield by the front driveway through a grove of grand old oaks and big-bodied pines it seems to stand out in bas-relief, and there is given without and within about the place an impression of stateliness and strength. The Colonial details are marked by the imposing pillars of the front porch and in other exterior and interior arrangements, but the individual air of the homestead as a whole absorbs interest. The oil paintings, old-time furniture, and the inside decorations, all bespeak the aristocratic and Colonial life of its owners, but these are all submerged in a general sense of a solid, substantial and imposing edifice, free from gaudy or conspicuous minor ornamentations.

This characteristic charm of Thornfield arises from association. Within its walls have thronged the elite of several generations, and Thornfield today is the Mecca of prominent people, and among its guests are numbered visitors from the far North, way down South, and from neighboring cities. Furthermore, the occupants of the place have been members of a sturdy and worthy ancestry.

It was to Peter Perkins, whose sister, Anne Perkins, married Joseph Scales, the grandfather of Thornfield's owner, that George III. made a deed in 1768. This deed "to Peter Perkins one certain tract or parcel of land containing 1,200 acres of land lying and being in the county of Halifax, on a great branch of Cascade Creek," was written on parchment, and is now in the possession of Mr. J. H. Scales. It was signed by "John Blair, the trusty and beloved President of our Council and commander-in-chief of our said colony and Dominion at Williamsburg," on July 20th, in the year of 1768.

The Perkins and Scales ancestry affords, from the prominence of its primitive and succeeding members, much interest. This family of Perkins had its origin in England, and "Upton Court" was their original home. In that country their name was illustrious. Prominent among them was Sir Christopher Perkins, who was educated at Oxford and the Jesuit College at Rome, and was a representative of Queen Elizabeth in Venice in 1596, by being made the bearer of a letter from her to that republic. He was also an ambassador to Denmark, and married the Countess of Buckingham. Of this family of Perkins it is said that Nicholas Perkins, born about 1640, who settled in Henrico county, was a descendant.

The Nicholas Perkins who settled in this section is a son of the Henrico Nicholas Perkins, and the father of Peter Perkins, to whom George III. made the deed of land on Cascade Creek. It was by the sister of Peter Perkins, Anne by name, who married Joseph Scales, that Thornfield came into the Scales family.

The Scales family are also from England, having emigrated from that country about the year 1700. They have ever been prominent in civil and military affairs, generals, colonels and governors being frequent titles to the name. The present owner of Thornfield does not fall short of his family prestige, having made a worthy record in the Civil War, and represents his day and vicinity in all moral civic duties in a most creditable way. The present mistress of Thornfield is a representative of a most renowned name. She was Miss Annie Avery, the granddaughter of Governor Morehead, of North Carolina, and a great-granddaughter of Weighstill Avery, of Connecticut, who was graduated from Princeton in 1760, and afterwards a tutor in that institution. He was also during his life an attorney to the crown, and Attorney-General of North Carolina, a colonel in the Revolutionary War, and a signer of the Mecklenburg Declaration.

No wonder, then, that Thornfield assumes a distinguished air!

This estate, when granted by the crown, adjoined what Colonel Byrd designated as the "Garden of Eden," but the tract now owned by Mr. Joseph Scales and his brother, Mr. Forrest Scales, has been made to comprise, by purchase, a portion of the said Garden of Eden. The Halifax county referred to in the deed embraced that part of Henry and Pittsylvania counties in which this estate is situated, as well as parts of other counties, and the great branch of the Cascade Creek mentioned is now known as Pumpkin Creek. The home, Thornfield, and the residence of Mr. Forrest Scales, built in recent years, are in Henry county, and the adjoining acres are within the boundaries of two States and three counties.

Thornfield is perhaps one of the most decided exponents of days before the Civil War in a social way, for the household affairs are conducted in the manner made possible by the service of a number of servants, trained and capable by inheritance to maintain the former course and conduct of ante-bellum domestics. Some of the old servants who knew the days of slavery have never left the place, and the present house-girl is one of the fifth generation who has served in the house. This bespeaks an unusual loyalty and reverence on the side of the servant, and kindness and consideration as virtues of Thornfield heads.

Before the war the Scaleses were large slave-holders. Since the war their interest has been chiefly in improved live stock and their agricultural products have been mostly in grain and grass. A portion of the farm, known as the "Colston," is especially adapted to the raising of grain. The farm is remarkably well watered, and is therefore utilized for pasturage to a great extent. The situation of the farm in and near the Garden of Eden, which impressed Colonel Byrd so forcibly of its beauty, indicates the picturesque scenery of levels and wooded knolls that makes the extent of acres most pleasing.

The homestead of Mr. E. F. Scales, built on a portion of the original Perkins tract, is an inviting and pretty residence, dispensing in like manner that hospitality which has characterized Thornfield. As a dairy farm, it merits the unrivaled success that is its distinction.

To this home and to Thornfield belongs in a great measure much of the social honor that has always been the chief charm or attraction of "the Meadows."

The Upper Nile---Big Schemes of River Improvement, Costing Millions

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KHARTUM.

I WANT to tell you about some gigantic projects which the English are considering as to the upper Nile. That mighty stream has now its whole course through British territory. It rises in Lake Victoria, in the British province of Uganda, and flows through that province into the Anglo-Egyptian Sudan. It winds its way through the Sudan, traversing the old land of Nubia, and then goes on down through Egypt, which is practically a dependency of Great Britain, to the Mediterranean Sea. From its source to its mouth it flows through about thirty degrees of latitude, and its course has a length of more than 4,000 miles. The British control not only the main stream, but most of its tributaries, and they own the great lakes of Victoria and Albert Nyanza, as far as the Nile outlets are concerned. The only other nation which has anything to do with the stream is the Abyssinian, in whose highlands the Blue Nile and Atbara have their sources. The control of these two rivers is, moreover, so regulated by treaties that they cannot be touched except by British consent, so that the Nile may be called an English river, and may be looked upon as in the hands of one of the richest, most able and most successful of the developing nations of the globe.

I have already told you of the improvements that the British have made as to the Egyptian course of this great waterway. For a month and more I have been traveling along that part of it. I have visited the great canals of the delta, and also the Barrages at Cairo and Assiout. I have written you of the huge dam at Assouan, which has been built at a cost of $12,000,000 to give the farms of Egypt a steady water supply. This dam has made a reservoir 140 miles long, and it now holds back 1,000,000,000 tons of water to feed the Nile when low. It is now to be raised twenty feet, and it will then hold back almost as much more. It has already added millions to the wealth of the lower Nile valley, and it has made the Egyptians one of the most prosperous peoples on the globe.

Big Projects of the Upper Nile.

The projects which the British are now considering are more important than anything they have done in the past, and they will rank as the most daring of the engineering plans of the century. If carried out they will cost as much as it did to build the Suez Canal, but they will assure the greater Egypt a steady water supply all the year round for all time to come; and they will build up here, at a distance of 1,500 or 2,000 miles south of the Mediterranean Sea, several other Egypts twice or thrice as rich as the lower Nile valley, each supporting its millions of people.

The projects embrace the regulation of the great lakes on the highlands of Central Africa, so that they may serve as reservoirs for the Nile. They include the embankment of those tributaries of the White Nile which flow through the great swamps on the northern slope of the Kongo watershed, and also the digging of more than 200 miles of new channel, by which the main stream of the White Nile will be greatly shortened and its bed fitted for carrying the enormous volume of its waters unrestrained down to Khartum. Another scheme contemplates the damming of the Atbara so that it will irrigate large tracts in upper Nubia, and still another the erection of a dam at Lake Tsana, on the highlands of Abyssinia, which will make that great lake a reservoir for the Blue Nile and enable it to water the fertile plain which lies between the Blue and White Niles, ending here at Khartum.

More Water Needed.

The great trouble now is that a large part of the waters of the Nile go to waste. It is in size the fourth river of the globe, ranking after the Amazon, the Kongo and the Rio de la Plata in basin and rainfall.

The area it drains is more than one-third as large as either Europe or the United States, and so much water falls that if it could be collected together it would more than fill a ditch a mile wide and a mile deep reaching from New York to Chicago. The river is fed by mighty lakes, one of which is the largest on earth. Victoria Nyanza is bigger than Lake Superior; Lake Albert is about the size of the Great Salt Lake, and Lake Tsana has an area of 1,200 square miles. Notwithstanding this, the windings of the Nile are such that more than one-half of the water supply does not get to the lands that need it, and during the summer there is only about enough saved to accommodate Egypt. At the time of the floods, which occur every year, vast quantities of water go to waste, and all the year around there is an enormous loss going on by the evaporation from the swamps of the upper Nile.

A Sponge as Biz as Indiana.

I despair of giving you an adequate idea of these mighty swamps. They lie on the northern slope of the Kong watershed, and are fed by the great branches of the White Nile, known as the Bahr el Jebel, the Bahr el Ghazal and the Bahr el Zaraf. They begin where the River Sobat flows into the Nile, and form an irregular triangle, the base running from there 200 miles westward, and with the southern apex at Bor, which is 200 or 300 miles farther south. They lie on the bed of what in prehistoric times was a great lake, and they are composed of masses of reeds, papyrus and other swamp grasses. These are so united that they soak up the water like a mighty sponge. Now, if you will imagine a sponge as big as the State of Indiana, from two to six feet in thickness, and so situated that it is always filled by the waters of the Nile, you may have some idea of this region. The place where the sponge lies is not far from the equator, and the tropical sun beats down upon it, so that a steam is always rising. It soaks up the waters of the Nile and gives them out into the air.

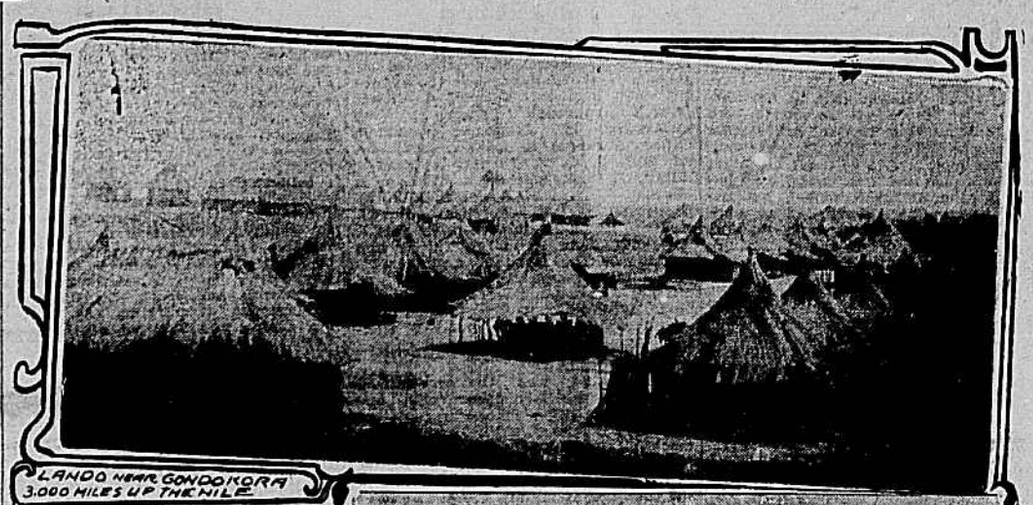
The evaporation is so great that an amount equal to half the capacity of the Assouan reservoir is lost every day, and in the summer fully 50 per cent. of the water supplied by the great lakes does not get into the main stream of the Nile. The water of this swamp is nowhere much over a man's head, and in most places, except where the main streams flow through, it is only about as deep as his waist. The evaporation increases at the time of the floods, when more land is covered, and no matter how much water flows into the swamp, only about the same amount flows out. This is so throughout the year.

The Sudd.

This vast region is known as the Sudd. It is now being explored, and attempts have been made to cut channels through it. I have met some of the surveyors who have attempted to penetrate it, and some who have broken away parts of it to open up channels for the Nile. They describe it as a vast sheet of brilliant green, made up of papyrus, feathery reeds and sword grass. These rise from five to fifteen feet above the water and are broken here and there by patches of ambatch trees and by channels, pools and lagoons. The greater part of it has no human inhabitants, and this is especially so of that region along the Bahr el Ghazal. There are some Dinka villages near Bor and a few tribes on the edge of the Belgian Kongo. Farther south at Lado and Gondokoro the region is populated.

It is only at the south of the swamp regions that big game is to be seen. There the land is a little higher, and elephants, giraffes and buffaloes inhabit the edges of the swamps. In the heart of it, and, in fact, in all parts of it, there are vast numbers of hippopotami, and there are all sorts of swamp birds everywhere. From the reeds and mud banks clouds of wild cranes, geese, storks, herons, pelicans and ducks of every description rise up as the boats approach, and there are insects by millions. There are all sorts of mosquitoes, moths, spiders and flies, and there are other insects which carry fevers, and the tsetse fly, which causes the sleeping sickness. Among the queer birds is the whale-headed stork, one of which may be seen here in the palace grounds at Khartum. The wild geese are black, white and brown.

It is impossible to conceive how closely the vegetation of the Sudd is matted together. The roots of some of the plants go down into the beds of the swamps, others float on the water, and the whole is one great united mass. Sometimes a section goes loose and becomes a floating island until it reaches a shallow place, where the roots will grow fast again. Such islands often block up the channels of the river, and some of the main tributaries have so much vegetation that it is impossible for a boat to make its way through them.



LADO NEAR GONDOKORA 3,000 MILES UP THE NILE.

MAP OF EGYPT AND THE SUDAN.

FERRY ON THE WHITE NILE.

Opening Up the Tributaries.

Nevertheless, one of the projects contemplates the opening up of these tributaries of the Nile. It is believed that the Bahr el Zaraf could be so banked up that it would carry the volume of the Nile and keep it out of the swamps, and thus save the enormous amount of water wasted by evaporation. The river would have to be banked up between Bor and Lake No, and in that case it could probably carry the Nile's summer water supply. The Bahr el Jebel will also be opened up for navigation, and by some means or other a great part of the river water will be held in its course. These schemes would mean an expenditure of millions of dollars. I think the estimate is about $18,000,000.

Another project, which seems to be more feasible, is the digging of a canal on the Nile, beginning at Bor and running south across to where the Sobat River flows in. Such a canal would carry the waters of the Nile along on the highlands above the swamps and prevent their flowing into them except when desired. This canal would need to be a little over 200 miles long, and it could be controlled at Bor by a regulator across the stream, by which as much or as little of the Nile as is needed can be sent down the river. The channel proposed would carry about 1,000 tons of water per second, which is only one-fifth more than the amount discharged into the big canal at Assiout. This Bor-Sobat canal would shorten the main Nile as a navigable waterway, and all the boats going up and down the stream would pass through it. The excavation would cost about $22,000,000 and the regulation works $5,000,000 more.

Damming the Great Lakes.

With this part of the Nile channel so improved by means of regulators at Lake Albert and Lake Victoria, where the Nile flows out, the supply of water for Egypt and a part of the Sudan would be unlimited. Lake Victoria would furnish an inexhaustible reservoir, and I understand that the proper works could be put in at Repon Falls at no very great expense. A dam there would mean the storage of 70,000,000,000 tons of water for every meter's rise of the lake. The Assouan dam, as it is now built, stores only 1,000,000,000 tons, and when it is raised according to the new plans now being carried out it will store only 2,000,000,000 tons. Raising the surface of Lake Victoria a little over a yard will store thirty-five times as much in addition to its present enormous contents.

There is one obstacle, however, to such an undertaking. The rising of the lake might flood parts of German East Africa, and if so the Kaiser would probably object. Dams at the mouth of Lake Albert would result in the storage of 5,000,000,000 tons for every meter of height, and the two lakes together would have for each meter added to them a storage capacity of 75,000,000,000 tons—an amount beyond conception enormous. Within the next few months I expect to make my way southward to the great lakes of Central Africa, and shall be able to discuss this matter from the standpoint of the conditions about Lake Vittoria. As the civil engineers here estimate it the regulation of Victoria and Albert Lakes could be accomplished at a cost of $10,000,000, which is $2,000,000 less than was the cost of building the Assouan Dam.

The Improvement of the Blue Nile.

If these projects for the White Nile are carried out Egypt will have all the summer water she needs and much of her desert, not now irrigated, can be made fertile. The water supply will be constant all the year round, and there will be no objection to the use of the Blue Nile for the irrigation of the dam.

That river will still be allowed to carry its heavy load of silt down to Egypt during the floods, but in summer it may be so regulated by a dam at Lake Tsana as will furnish perennial irrigation to a large region near here. The Blue Nile is just about as long as from Philadelphia to Chicago. It rises in the mountains of Abyssinia, at an altitude as great as that of the top of Mount Washington, and winds its way down through Abyssinia and the Sudan to Khartum, where it joins the White Nile. The river here is about as wide as the Potomac at Washington, and its waters are now beautifully clear. During the floods they turn reddish brown, being loaded with a great quantity of the leaf mold of the Abyssinian forests and the scourings of the volcanic rocks of the Abyssinian plateau. The river is navigable as far as the cataracts at Rosaires, which is 426 miles from here, and there are regular steamers plying upon it. Beyond that point the stream is known as the Abai. It flows out of Lake Tsana in a series of channels and light rapids, which soon unite to form a stream 700 feet wide, in which shape it flows on, narrowing and widening, until it reaches Rosaires.

About five years ago one of the engineers of the Egyptian irrigation service, Mr. Dupuis, made an exploration of the Blue Nile, and went around Lake Tsana. He estimated that the lake will store something like 3,000,000,000 tons of water, and that with the construction of proper dams and regulators, 15,000,000 tons per day can be given out from January until June. He says that Lake Tsana can be easily controlled, and that without affecting the large grazing lands which are found near its shores. Another dam might be made at the Rosaires rapids, and the two would probably furnish sufficient water to irrigate a great part of the rich lands lying between the White and Blue Niles.

The Control of the Atbara.

This same engineer made an investigation of the Atbara river. This is the Black Nile, which flows into the main stream about two hundred miles north of the mouth of the Blue Nile. The Atbara is fed by the Abyssinian torrents, and while in flood it is of great size, although during the summer a large part of its bed is perfectly dry. It is called the Black Nile on account of its color when in flood. At that time its waters are heavily charged with volcanic dust and it carries down a great quantity of the rich fertilizing mud to which the lower Nile valley owes its wonderful fertility. The river begins to rise in July. Its floods last only about eight days and it dries up toward the end of September.

Mr. Dupuis proposes a great reservoir near the apex of the Atbara Delta. In this the water will drop its silt, and when its become clear it can be carried through different regulators into canals and used for irrigation. If this is done considerable land at the junction of the Atbara and the main Nile can be irrigated, and a thriving region will result there at the point where the Nile and Red Sea road unite with the great route from Cairo to the cape.

The Nile a New River.

The schemes that I have described are so far only in embryo. Sir William Garstini, who is at the head of the public works of Egypt and the Sudan, has made a report upon them and the government has sent out explorers along the different rivers to investigate their possibilities. They report many new things regarding the Nile system, the upper part of which is now for the first time becoming known to the world. During a recent interview with the sirdar, Sir Reginald Wingate, I asked him whether we have yet gotten an accurate knowledge of the sources of the Nile and the actual flow of its waters.

"We are learning a great deal about it," was his reply. "We have surveyed the main stream from where its flows out of Victoria Nyanza and have followed it down to Khartum. There are many of the tributaries, however, of which we know but little. I have men now exploring the vast system of streams which feeds the White Nile and the Bar el Ghazal, our province which borders the Congo watershed. That country is difficult of access. It is covered with a rank vegetation consisting of papyrus, reeds and grasses which are twelve or fifteen feet in height, and our officers have to keep track of one another by sending up rockets from time to time. Our first attempts at the investigation of those streams were from the north, but we are now going to their headwaters and following the streams down to where they flow into the Nile. We are building boats there, and we hope to open such communication my steamer that goods can be taken by the Nile to and from the watershed of the Congo."

FRANK G. CARPENTER.

FIRELESS STOVES.

Latest German Improved Self-Cookers Pronounced a Decided Success.

In reply to a Kansas City correspondent Deputy Consul-General John W. Dye, of Berlin, furnishes the following information concerning the newest form of fireless stoves in Germany:

Fireless stoves, or self-cookers, as they are variously known, have been in use in Germany for a number of years, so that they may now be classified as successful. The earlier types are merely boxes constructed with double walls, or by secret processes built so as to retain heat when sealed. These cookers, which are still on the market, are used as follows: After a thorough heating, food to be cooked (stewed or boiled) is placed inside the box, sealed, and left for a sufficient time, when it is opened, and the food, cooked by the retained heat, is ready to serve.

Recently a company here has improved upon the apparatus and produced a fireless stove that not only cooks, but fries and roasts. Profiting by past failures and successes the company has perfected a cooker that, although on the market but a year, has already proved very popular. Frying and roasting are accomplished in the new cooker by the use of a heated stone. The stone is thoroughly heated in an oven, over gas or any fire, and placed in the cooker with the steak or roast. The box is sealed up and left for an hour or so, as required, then opened, and the food is fully prepared and hot. In the double boxes all three processes may proceed at one time without care or difficulty.

The owners of the patents on this latest apparatus claim that the sales in the coming year will exceed 50,000 cookers in Germany and Switzerland.

What Comes of the Ditto Habit.

A somewhat doubtful story concerning the bank of England has lately been going the rounds of the city. According to the rules of the bank, members of the staff are required to sign the time book on arrival each morning, and those putting in an appearance of the 10 minute's grace limit have to state the reason for their lateness. On foggy mornings, of course, it is no uncommon thing for the bulk of the staff to arrive late, and, as a rule, the first man signing will state as the reason "fog," to which every one signing afterward will put "ditto," like the man who tried to save time by marking his shirts. On one occasion, so the story goes, the first late comer to arrive on a foggy morning wrote in the time boook, "Wife had twins." This the next man to sign failed to observe, and accordingly there followed a whole string of ditto, ditto, ditto, ditto.

Wanted No Fuss Made.

In a country church one Sabbath, as the congregation were rising for the first hymn, an old lady entered the church at the same time. She held up her hand, exclaiming: Keep yer seats, Losh, ye needna arise, tho' I have come in."—London Tit-Bits.

Jimmy is Willing.

Swarthmore College has forfeited millions to retain its liberty. Mr. James Hazen Hyde would think it really kind if he was given a chance to go and do likewise.—Chicago Post.

Saving the Bears.

Bears will be extinct in less than another generation. Nothing can save them but a third term.—St. Louis Globe-Democrat.

Paris Scientist Makes Gems by Use of Radium

Consul-General Frank H. Mason, of Paris, transmits a report upon the recently announced discovery by a French scientist of a process by which corundum spar may be converted into rubies, sapphires, topazes, and other gems by exposure to the action of radium. He writes:

The scientific sensation of the moment in Paris is the fact, which is profusely announced in the newspapers, that Prof. Frederick Bordas, of the College of France, has succeeded, after long and patient experiment, in producing precious stones by exposing the coarse ordinary form of crystallized alumina known as corundum or adamantine spar to the action of radium.

The possibility that this process may be used industrially for the production of certain kinds of precious stones at a cost which will seriously modify the present market values of the natural gems invests the subject with so much interest that a brief report may prove of value.

It will be remembered that all these gems are in composition crystallized alumina, but through long exposure to varying conditions of heat and pressure during the slow cooling and development of the earth's surface they have assumed different colors, to which the names of ruby, amethyst, etc., have been given. The discovery of radium revealed the active agent through which various changes in certain substances, which had hitherto been of slow progress, might be intensified and accomplished in a comparatively brief time.

The present discovery of Professor Bordas was suggested by the fact that the minute glass tubes in which radium is confined and kept for scientific use take on gradually a beautiful azure color resembling the sapphire. This was attributed by Professor Berthelot to the presence of minute traces of manganese in the glass, which the marvelous projective power of the radium reveals and revives with varying grades and tints of coloration. Professor Bordas, therefore, placed crystallized corundum of several tints in contact with minute tubes of radium laid them away in a dark place not subject to changes of temperature, and found after a lapse of several weeks that the white corundum had become yellow like the topaz, the blue crystals had become green like emerald, and the violet had turned to blue like the sapphire.

Jeweler's Test—Power of Radium.

Thus was overthrown the theory held hitherto by scientists that each of these precious stones has its own special coloring oxide, and that these several oxides—green, blue, red or yellow—have no definite relation to each other. Professor Bordas, as the published accounts relate, took his newly created gems to a leading lapidary jeweler, from whom he had purchased the corundum crystals, who identified and tested them, and found that they had been converted into a topaz, a ruby, and a sapphire which fulfilled all the tests and requirements of natural stones.

He then obtained from the same jeweler a new series of corundum crystals in pairs, each pair of an exactly similar color. One stone of each pair was exposed for a month to the action of radium, the other retained for comparison, and the result of this second experiment was the same as before. The light reddish corundum, valued in commerce at about 50 cents per carat, had been converted into a ruby valued at $100 to $150 per carat. The dark red corundum became a deep brilliant violet, the violet amethyst had become a sapphire, and the bluish corundum a topaz.

The possible effect of this discovery upon the trade in jewelry and precious stones can be readily inferred. Radium is as yet, one of the rarest and most precious substances known to science, but the duration of its power is practically unlimited, and since one milligram (0.0154 grain) of radium is sufficient to convert several corundum crystals into precious stones within the space of a month, and since this process may be repeated indefinitely with the same speck of radium, it is naturally, though perhaps prematurely, assumed that this latest discovery may have an important industrial value and lead to serious modifications in the commercial prices of certain precious stones. Professor Bordas, however, regards his discovery as a mere laboratory experiment and disclaims any intention to secure for it a commercial value.